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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/534,814

05/13/2005

George Jaroslav Cap

21854-00057-US1

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12/08/2006

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EXAMINER

DOUGHERTY, THOMAS M

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--|---|--|
| Office Action Summary | Application No. 10/534,814 | Applicant(s) CAP, GEORGE JAROSLAV | |
| | Examiner Thomas M. Dougherty | Art Unit 2834 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 and 16 is/are allowed.
- 6) ☒ Claim(s) 9 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 9, 11, 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Balamuth (US 3,457,463). Balamuth shows (fig. 2) an electrical generator for harvesting energy from environmental vibrations or motion which includes: a) an elongated support (25) fixed at one end (24') with the other end free to move or flex; b) a coil (26) with electric outputs (27, 28) secured to said elongated support (25) remote from the fixed end (24'); and c) a magnetic field (22) adjacent the coil (26) such that movement of the coil (26) induces an electric current in the coil (26).

There are several elongated supports of varying dimensions selected to provide a wider vibrational bandwidth. See discussion at col. 3, lines 22-26 in which a plurality is cited which comprises differently tuned elements.

The magnetic field is provided by permanent magnets (22) which are configured to maximize the magnetic flux in the path of the moving coil (26). Note that as there may be a plurality of components which are differently tuned, there are also a plurality of permanent magnets implicit in such a plurality.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balamuth (US 3,457,463) in view of McKnight et al. (US 6,433,465). Given the invention of Balamuth as noted above, his support is U-shaped not specifically L-shaped. He does not show a DC to DC voltage converter and a voltage detector.

McKnight et al. show (figs. 7, 8) an electrical generator (16) for harvesting energy from environmental vibrations or motion which includes: a piezoelectric polymer (16) and circuit elements.

Their electrical generator incorporates a DC to DC voltage converter (e.g. 28 or 32) and a voltage detector (e.g. 26 or 30).

They do not show an elongated support fixed at one end with the other end free to move or flex; a coil with electric outputs secured to said elongated support remote from the fixed end; and a magnetic field adjacent the coil such that movement of the coil induces an electric current in the coil.

Their device is not L-shaped.

It would have been obvious to one having ordinary skill in the art to employ the coil arrangement of Balamuth along with the voltage detector and DC to DC converter of McKnight et al. in order to regulate the voltage output of the device, thereby allowing it to do useful work.

Regarding the claimed L-shape of the device, this is a mere reduction of the already extant U-shape of Balamuth, thus the shape is a subset of that of Balamuth's. Such a halving of the shape of the Balamuth invention involves skills well within the abilities of routineers in the art.

Allowable Subject Matter

Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 15 and 16 are allowed.

The following is an examiner's statement of reasons for allowance or indication of allowance: the prior art does not show or suggest in combination both a coil and magnet energy harvesting arrangement in combination with a piezoelectric membrane where the piezoelectric membrane is incorporated into the support for either the magnet and/or the coil so that the vibration or motion also produces a voltage in the piezoelectric membrane sufficient to power the rectification of the voltage produced by the relative movement between the coil and the magnet.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Art Unit: 2834

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art cited reads on at least some aspects of the claimed invention.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Direct inquiry to Examiner Dougherty at (571) 272-2022.


tmd

December 6, 2006


TOM DOUGHERTY
PRIMARY EXAMINER